EFFECT OF LOW IMPACT AEROBIC DANCE EXERCISE ON FLEXIBILITY AND RELATIVE FAT MASS (RFM) AMONG SEDENTARY MEN EMPLOYEES IN KANNUR (DT) OF KERALA

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ABSTRACT: The present study investigated the effect of twenty three weeks of low-impact aerobic dance exercise on flexibility and Relative Fat Mass Index (RFM) among sedentary men employees, specifically in Kannur district of Kerala state (North Malabr). Sedentary participants (age range = 30 – 40 years; N = 40 were randomly assigned to two groups: experimental and control group. Training was administered to the experimental group for 50 minutes, 3 days per week, for 23 weeks. Paired t- Test revealed statistically significant effects for flexibility and RFM Index of sedentary men. Therefore there was a significant difference in flexibility and Relative Fat Mass level scores in the experimental group compared to the control group. Subjects of the experimental group, "Aerobic dancing group" experienced the most benefits.

KEY WORDS: Flexibility, Relative Fat Mass, Aerobic dance, Low impact, Sedentary, Hypo kinetic diseases, Cardio Vascular Diseases.

INTRODUCTION.

Low impact Aerobic dance exercise provides lasting benefits to Physical well being of an individual. Aerobic dance exercise is one of the most common exercises practices all over the world. Aerobic dance is a popular activity, perform by the groups of all ages, and is more popular among middle-aged men and women. Music with slow or fast dance rhythm helps to control and pace the movement of selected body segments allowing for an overall body workout.

The World Health Organization has projected that Hypo kinetic diseases (Diseases associated with lack of movements) associated with cardiovascular disorder will be the world's leading cause of death and

disability by the year 2025. Advent of modern technology particularly information communication technology transformed new generation people to sedentary, narrow-minded and mentally unstable. The term "Economy" has been mismanaged by the modern generation by sacrificing its actual concept to a catalyst to make life easier in terms of effort, luxury and energy. Consequently sedentary life style (in the name of economy) of people has become a serious menace for healthy living. Cardio vascular diseases (CVD) such as Heart attack, Hypertension, Stroke and metabolic syndrome like Obesity, Diabetes and Depression have become more common among the working class (Professionals). After referring several relevant literatures available and also in consultation with a lot of sedentary professionals such as Medical Practitioners, Journalists, Engineers, and Government Officers, the investigator found that there are umpteen Physical problems prevail in the sedentary professional groups.

The investigation into the correlation between low impact aerobic dance exercise and Physical variables such as Flexibility and Relative Fat Mass may not be new, however questions remain as to what frequency, intensity, and duration of physical activity is most feasible and effective for effecting both Flexibility and Relative Fat Mass Index.

However, the question was, at what impact and frequency will aerobic dance exercise benefit both physiological and psychological well-being. Aerobic exercise is a subdivision of physical exercise that improves cardiovascular and respiratory health. During aerobic exercise, a person rhythmically contracts his large muscle groups to move his body against gravity. At the moderate level, a person will produce a slight increase in his breathing and heart rate. At the vigorous level, a person will produce a large increase in his breathing and heart rate. The amount of exercise required to produce health benefits according to Haskell has to do with a dose response relationship. According to this theory, it is necessary to expend approximately 300 calories per exercise session every two to three days at a moderate level of intensity to receive substantial benefits from exercise. Exercise of a lesser dose will provide fewer to no benefits, and exercise of a greater dose will provide additional benefits.

The majority of research indicates that aerobic exercise produces Physical effects in people who participate in aerobic dance exercises at moderate levels, vigorous levels, or moderate and vigorous levels combined. In this study, the investigator was interested in analyzing the effects that low-impact aerobic dance exercise has on Flexibility and Relative Fat Mass Index (RFM). RFM concept was published by Woollcott and Dr.Richard Bergman in 2018. Here the relative

Fat mass will be calculated as RFM=64- (20 x (height /waist circumference) both in meters) + (12 x Sex). Sex= 0 for male and 1 for female which has been proven as more accurate than traditional BMI to asses Obesity.

Walking, biking and elliptical training are all good examples of Low impact aerobic exercises compared to high impact running and jumping. Low impact doesn't necessarily mean low intensity.

This study will apply a pre and post test to compare the effect of the low-impact aerobic dance exercise on Flexibility and Relative Fat Mass among sedentary men.

MATERIALS AND METHODS

Paired T-test was used to examine the effect of Low impact aerobic dance exercise on Flexibility and RFM scores of sedentary men. The Study was carried out in the School of Physical Education and Sports sciences, Kannur University, a department which serves as a research centre for Physical Education and Sports Sciences under Kannur University, Kerala. The research was performed on a sample of 40 sedentary employees (men) in Kannur district of Kerala. Further to that, their age range from 30-40 years, subjects were randomly assigned in control group (n=20) and in the experimental group (n=20). The experimental group meets 3 times a week on Monday, Wednesday, and Friday at 4.30pm until 5.30pm in aerobics room while the control group met similar day and venue but at 5.30pm to 6.30pm. Group 1, the experimental group, receives treatment between the pre-test and post-test where subjects have to go through 69 sessions, 50 minutes each (15 mts warm up + 20 minutes aerobic workout + 15 minutes warm down). On the other hand, Group 2, the control group was instructed not to do any kind of physical exercises.

The data was collected by using Sit and Reach test for Flexibility while Relative Fat Mass Index was calculated by collecting the Height and waist circumference of the subjects.

EXPERIMENTAL DESIGN AND STATISTICAL TECHNIQUE

The data collected from experimental and control groups prior to and after the completion of the low impact aerobic dance training period on selected variables were statistically examined for significant differences, if any, by applying analysis of covariance (ANCOVA). The pre test and post test means of experimental and control groups were tested for significance by applying analysis of variance (ANOVA). Since both experimental and control groups were selected from the same population there is a possibility of affecting the post test mean. For eliminating any

possible influence of pre test means the adjusted post test means of experimental and control groups were tested for significance by using analysis of covariance (ANCOVA). All the data were analyzed using Statistical Package for Social Sciences (SPSS). The level of confidence was fixed at 0.05 level of significance as the number of subjects was limited and also as the selected variables might fluctuate due to various extraneous factors. Paired t-test was applied to compare the means of pre test and post test variables of experimental and control groups for selected Physical variables of sedentary men. To find out the variance in each dependent variable that may arise due to the application of independent variables, analysis of covariance (ANCOVA) was applied and the level of significance to test the F ratio was fixed at 0.05.

RESULTS

Table-1

Paired Samples t-test for Flexibility and BMI

PAIRED VARIABLES		MEAN	STD. DEVIATION	t	Sig.(2 tailed) p
Pair 1	EX.PRE-FLBTY—EX.POST-FLEXIBILITY	-2.050	-9.180*	-9.180*	.000
Pair 2	CT.PRE-FLBTY—CT.POST-FLEXIBILITY	-.250	-1.561	-1.561	.135
Pair 3	EX.PRE-RFM—EX.POST-RFM	.545	5.434*	5.434*	.000
Pair 4	CT.PRE.RFM—CT.POST-RFM	-.370	-4.927*	-4.927*	.000

Table value= 2.09

The obtained result for pair 1(t = - 9.180, p = 0.000) indicated that low impact aerobic dance training programme significantly improved flexibility of sedentary men while the result of pair 3 (t = 5.434, p = 0.000) indicated that low impact aerobic dance training programme significantly reduced RFM of sedentary men.

Table-2

ANALYSIS OF COVARIANCE COMPUTED FOR EXPERIMENTAL GROUP AND CONTROL GROUP FOR FLEXIBILITY

TESTS		EXPERIMENTAL GROUP	CONTROL GROUP	SOV	SS	DF	MS	F-ratio
PRE TEST	Mean	33.25	34.20	B	9.02	1	9.02	0.24
	SD	6.54	5.78	W	1448.95	38	38.13	
POST TEST	Mean	35.3	34.45	B	7.22	1	7.22	0.19
	SD	6.47	5.64	W	1401.15	38	36.87	
ADJUSTED POST TEST	Mean	35.76	33.99	B	31.30	1	31.30	41.84*
				W	27.69	37	0.75	

*Significance at 0.05 levels

From the Table -2 it is clear that there was no significant difference in the Pre test means between experimental group and the control group since the obtained F value 0.24 was less than the table value 4.10 with df 1 and 38 at 0.05 level of confidence. The F value of 0.19 for the Post test also proved to be statistically insignificant since it was less than the table value of 4.10 with df 1 and 38 at 0.05 level of confidence. Further the F value of 41.84 for the Adjusted Post test mean proved to be significant since it was greater than the table value of 4.11 with df 1 and 37 at 0.05 level of confidence.

The results of the study indicated that there was a significant difference between the adjusted post test mean of experimental group and the control group on Flexibility at 0.05 levels. It is understood from the result that there was a significant improvement in the level of flexibility for

experimental group than the control group due to the low impact aerobic dance training programme.

Table-3

ANALYSIS OF COVARIANCE COMPUTED FOR EXPERIMENTAL GROUP AND CONTROL GROUP FOR RELATIVE FAT MASS (RFM)

TESTS		EXPERIMENTAL GROUP	CONTROL GROUP	SOV	SS	DF	MS	F-ratio
PRE TEST	Mean	25.17	25.10	B	4.97	1	0.04	0.006
	SD	2.77	2.78	W	293.55	38	7.72	
POST TEST	Mean	24.63	25.47	B	4.56	1	0.03	0.057
	SD	2.50	2.86	W	287.54	38	7.13	
ADJUSTED POST TEST	Mean	24.59	25.51	B	8.33	1	8.33	56.32*
				W	5.47	37	0.14	

*Significance at 0.05 level

From the Table -3 it is clear that there was no significant difference in the Pre test means between experimental group and the control group since the obtained F value 0.006 was less than the table value 4.10 with df 1 and 38 at 0.05 level of confidence. The F value 0.057 for the Post test also proved to be statistically insignificant since it was greater than the table value 4.10 with df 1 and 38 at 0.05 level of confidence. Further the F value 56.32 for the Adjusted Post test proved to be significant since it was greater than the table value of 4.11 with df 1 and 37 at 0.05 level of confidence. The results of the study indicated that there was a significant difference between the adjusted post test mean of experimental group and the control group on Relative Fat Mass (RFM) at 0.05 levels. It is understood from the result that there was a significant reduction

in the level of RFM for experimental group than the control group due to the low impact aerobic dance training programme.

Figure 1
Adjusted Post Test means of Experimental and Control groups on Flexibility

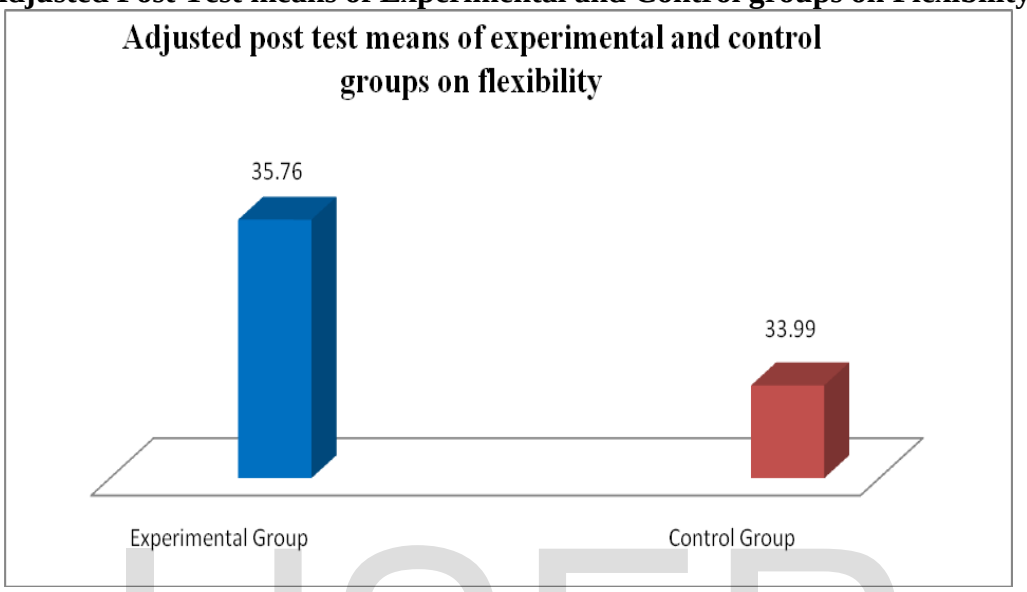
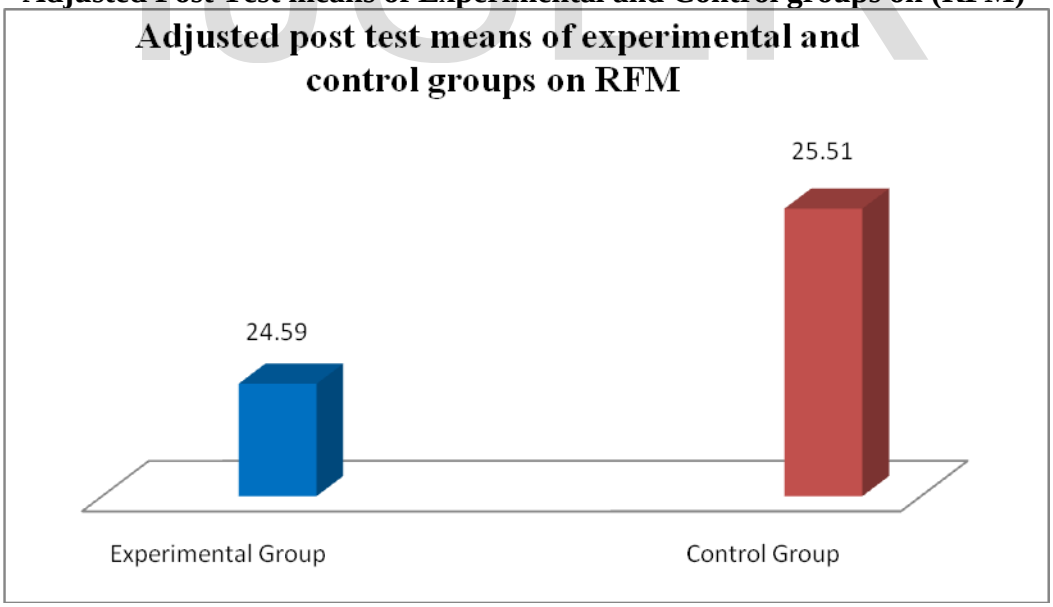


Figure 2
Adjusted Post Test means of Experimental and Control groups on (RFM)



ANALYSIS, DISCUSSION AND INTERPRETATION

The purpose of this study was to determine the effect of low-impact aerobic dance exercise treatment on changes in Physical Variables especially flexibility and Relative Fat Mass Index (RFM) on sedentary employed men in kannur dist of Kerala. It was hypothesized that the group

undergoing the low-impact aerobic dance would improve their flexibility and would reduce their RFM as against the control group. The results supported the hypothesis. The success of the low-impact aerobic dance routine programme in the present study was likely due to the application of total body movements and dance forms making use of local dance music, for the experimental group. This result can be explained by the fact that a larger amount of total work is accomplished with the link between music and the attainment of flow state during aerobic dance exercise.

CONCLUSIONS

In summary, this research will serve as a supplementation for future studies and developments. All of these research efforts work towards improving the future of preventative medicine and achieving better well-being and lifestyle of employed sedentary men suffering from hypo kinetic diseases such as Diabetes, Coronary heart diseases, Obesity , Osteoporosis and even Cancer to improve total quality in their career. In short, a low-impact aerobic dance exercise routine is indeed a simple and cost-effective preventive medicine for Hypo kinetic diseases. It is a fun and safe way to exercise for people from all age groups. Ultimately, a low-impact aerobic dance exercise routine improves the population's physical well-being especially Flexibility and Relative Fat Mass Index which in turn promotes employability and quality of employees.

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